

537,019

10/537019

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 June 2004 (17.06.2004)

PCT

(10) International Publication Number
WO 2004/051225 A2

(51) International Patent Classification⁷: G01N
(21) International Application Number:
PCT/US2003/038587
(22) International Filing Date: 2 December 2003 (02.12.2003)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/430,223 2 December 2002 (02.12.2002) US
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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

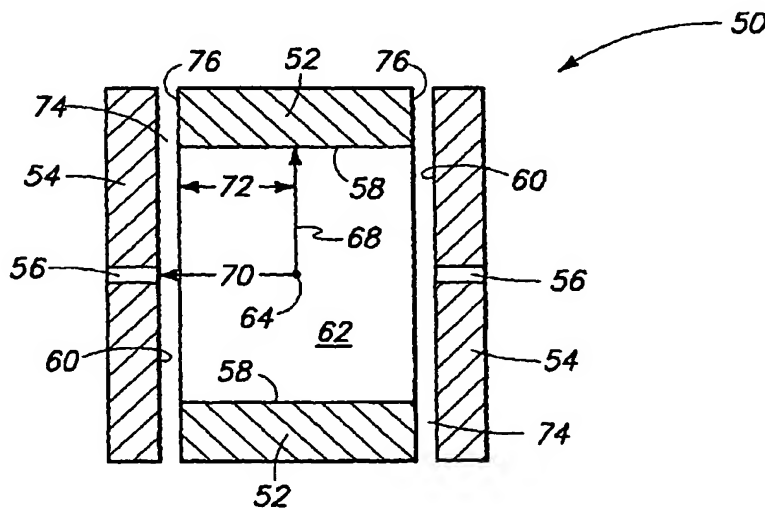
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM,

[Continued on next page]

(54) Title: PROCESSES FOR DESIGNING MASS SEPARATORS AND ION TRAPS, METHODS FOR PRODUCING MASS SEPARATORS AND ION TRAPS. MASS SPECTROMETERS, ION TRAPS, AND METHODS FOR ANALYSING SAMPLES



(57) Abstract: In one implementation, processes for designing mass separators from a series of mass separator electric field data and processes for designing an ion trap from a range of data pairs and a mass analyzer scale are provided. Methods for producing mass separators including ion traps having Z_0/r_0 ratios from about 0.84 to about 1.2 are also provided. Mass spectrometers are also provided that can include mass separators in tandem with one being an ion trap having a Z_0/r_0 ratio between 0.84 and 1.2. The present invention also provides methods for analyzing samples using mass separators having first and second sets of components defining a volume with a ratio of a distance from the center of the volume to a surface of the first component to a distance from the center of the volume to a surface of the second component being between 0.84 and 1.2.

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